Material Safety Data Sheet

Data prepared: June 4, 2002 Data revised: Jan. 1999

1. Identification of the substance/preparation and the company

Product Name: **Gorilla Glue®**

Product Type: Polyurethane adhesive for wood and wood substrates

Distributor: The Gorilla Glue company
4550 Red Bank Expressway
Cincinnati, OH 45227
Tel: (513) 271-3300
Fax: (513) 527-3742

Emergency telephone number:

2. Composition/information on ingredients

Chemical name	CAS No.	% content
Urethane prepolymer	trade secret	60-70
Polymeric MDI*	9016-87-9	30-40

* MDI: 4,4'-Diphenylmethan diisocyanate.
Polymeric MDI is a mixture of monomeric MDI, isomeres and homopolymer

3. Hazards identification

Vapours from the product may be irritating to the eyes, respiratory system and skin. MDI in product is a strong sensitiser, resulting in possible allergic reactions. Skin and eye contact may cause irritation and sensitisation.

4. First aid measures

Inhalation:
Move affected individual to fresh air, administer oxygen and artificial respiration as necessary. Call doctor if any problem persists.

Eye contact:
Flush eyes for at least 20 minutes while holding eyelids open. Seek medical attention.

Skin contact:
Remove contaminated clothes immediately, and wash skin thoroughly with soap and warm water. Get medical attention if irritation or sensitization develops or persists.

Ingestion:
Product is not intended to be ingested or eaten. If this product is ingested, severe irritation of the gastrointestinal tract may occur, and should be treated symptomatically. Call doctor or ambulance.

5. Fire fighting measures

Upper flammable limit (UFL): Not determined
Lower flammable limit (LFL): Not determined

NFPA: Health - 3, Flammability – 1, Reactivity – 1
HMIS: Health – 3, Flammability – 1, Reactivity - 1

General fire hazards :
Down-wind personnel must be evacuated. Do not reseal contaminated containers; a chemical reaction generating carbon dioxide gas pressure may occur resulting in rupture of the container. Dense smoke is emitted when product is burned without sufficient oxygen. When using water spray, boil-over may occur when product temperature reaches the boiling point of water, and the reaction forming carbon dioxide will accelerate. MDI vapour and other gases may be generated by thermal decomposition.

Special hazards in fire:
In case of fire, formation of carbon monoxide, carbon dioxide, nitrogen oxide, isocyanate vapour, and traces of hydrogen cyanide is possible.

Extinguishing Media:
Carbon dioxide, dry powder, and foam. In cases of large scale fires, alcohol-resistant foams are preferred. If water is used, it should be used in very large quantities. The reaction between water and isocyanate may be vigorous.

Required special protective equipment for fire-fighters:
Fire fighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products.

6. Accidental release measures

Personal precautions:
Wear full-protective clothing and respiratory protection as required to maintain exposures during clean-up below the applicable exposure limits.

Environmental precautions:
Do not discharge spillage into drains.

Dam remainders with sand, earth, or other suitable absorbent. MDI in contaminated areas can be neutralised with an a ammonia/water solution (90%water, 3-8%ammonia, plus2%detergent. Use 10 parts neutraliser per one part isocyanate.)

Clean-up procedures:
Dispose of spilled material in accordance with federal, state, and local regulations in permitted hazardous waste management facility. Incineration is the preferred method of disposal. Empty containers must be handled with care due to product residue. Do not heat or cut empty containers with electric or gas torch.

7. Handling and storage

Handling:
Avoid skin and eye contact. Avoid inhalation of fumes. Smoking, eating and drinking are not allowed in the work-place.
Personal protection: see Section 8.

Storage:
Keep product away from sources of alcohols, amines, or other materials that react with dissocyanates. Avoid prolonged heating above 160°C/320°F.
Store product in tightly closed containers in a well-ventilated place and in accordance with national regulations. Keep out of reach of children.

8. Exposure controls/ Personal protection

For exposure controls see Section 15.

Component exposure limits:

Name	CAS no.	ppm	mg/m^3
4,4'-Diphenylmethan diisocyanat	101-68-8	0.02	0.2

Personal protection equiment:
General: Were suitable protective clothing, protective gloves and protective goggles/ mask.

Suitable materials for safety gloves:	Natural rubber/natural latex – NR (>= 0.5 mm) Polychloroprene – CR (>= 0.5mm) Nitrile rubber – NBR (>= 0.35mm) Butyl rubber – IIR (>= 0.5 mm)
Suitable materials for clothing:	polyethylene/ethylene vinyl alcohol laminate (PE/VAL) has been reported as an effective material of construction for chemical protective clothing for MDI.
Respiratory protection:	Must be used if concentration above the critical values.
Hand protection:	Use protective lotion or gloves.

Eyes protection:	Chemical goggles or full face shields are recommended. An eyewash fountain and safety shower should be available in the work area. Contact lenses should not be worn when working with this product.
Skin protection:	Wear special gloves and working clothes to avoid skin irritation or sensitization. Depending on operation, chemical resistant boots, overshoes, and apron may also be required.
Ventilation:	If vapour or mist is generated during processing or use, local exhaust ventilation should be provided to maintain exposures below the applicable limits.

9. Physical and chemical properties

Physical form:	liquid
Colour:	dark-brown
Odour:	mild amine
Boiling point:	368°C
Flash point:	>190°C
Vapour pressure:	< 0,00001 mbar at 20°C
Specific gravity:	1,15 g/cm^3 at 20°C
Viscosity:	approx. 10000 mPa.s at 20°C
Solubility in water:	reacts
pH:	not applicable
Percent volatile:	Not determined

10.Stability and reactivity

Stability:
The product is stable under the recommended handling and storage conditions (see section 7).

Hazardous decomposition products:
By exposure to high temperature, hazardous decomposition products may develop, such as isocyanate vapour and mist, carbon dioxide, carbon monoxide, nitrogen oxide, and traces of hydrogen cyanide.

Hazardous reaction:
Exothermic reaction with amines and alcohols; reacts with water forming heat, CO_2, and insoluble polyurea. The combined effect of CO_2 and heat can produce enough pressure to rupture a closed container.

11.Toxicological information

Acute Toxicity: LD_{50} oral, rat: > 5000 mg/kg

Inhalation: May cause irritation of the mucous membranes of nose, throat or trachea.

Skin contact: Prolonged or repeated contact may result in dermatitis, either irritative or allergic.

Eye contact: May result in conjunctiva irritation and mild corneal opacity.

Medical information: Symptomatic treatment.

12. Ecological information

The product should not be discharged into drains or streams.

Biodegradability: 0% after 28 days

Acute fish toxicity: LC0 = > 1000 mg/l (96 hrs.)

Toxicity for daphnia: EC 50 = > 1000 mg/l (24 hrs.)

Acute bacteria toxicity: EC50 = > 100 mg/l (3 hrs.)

13.Disposal considerations

The product remnants are classified as chemical waste. Dispose of waste according to Local, State, Federal, and Provincial Environmental Regulations.

14. Transportation Information

This product is not classified as hazardous material for transport.

NU number:	-
Packaging group:	-
Land transport	
Transport class:	-
Risk code:	-
Name according to bill of freight:	-
Other information:	-
Sea transport	
IMDG class:	-
Correct technical name:	-
Other information:	-

Air transport

ICAO/IATA class:	not reatr
Correct technical name:	-
Other information:	-

15. Regulation information

This product and its components are listed on the TSCA 8(b) inventory.

Hazard designation: Xn – harmful.

Contains: 4,4'- diphenylmethane diisocyanate (MDI), isomere.

R-phrases: 20 – harmful by inhalation
36/37/38 – Irritating to eyes, respiratory system and skin.
42/43 – May cause sensitization by inhalation and skin contact.

S-phrases: 23 – Do not breathe gas/fumes/vapour/spray.
36/37 – Wear suitable protective clothing and gloves.
45 – In case of accident or if you feel unwell, seek medical advice immediately. (show the label where possible)

Any existing national regulations on the handling of isocyanates must be observed.

16. Other information

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or Provincial, and Local laws.

Date	Safety data sheet
06/07/2002	Gorilla Glue